

# FE250

Diagram No. 8252-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

## DESCRIPTIVE REPORT

Type of Survey ... Field Examination .....  
Field No. .... RA-5-1-83 .....  
Office No. .... FE-250 .....

### LOCALITY

State .... Alaska .....  
General Locality .... Peril Strait .....  
Locality .... Haley Rock .....

1983

CHIEF OF PARTY  
CDR W.F. Forster

### LIBRARY & ARCHIVES

DATE .... June 21, 1984 .....

FE250

## HYDROGRAPHIC TITLE SHEET

FE-250

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form,  
filled in as completely as possible, when the sheet is forwarded to the Office.

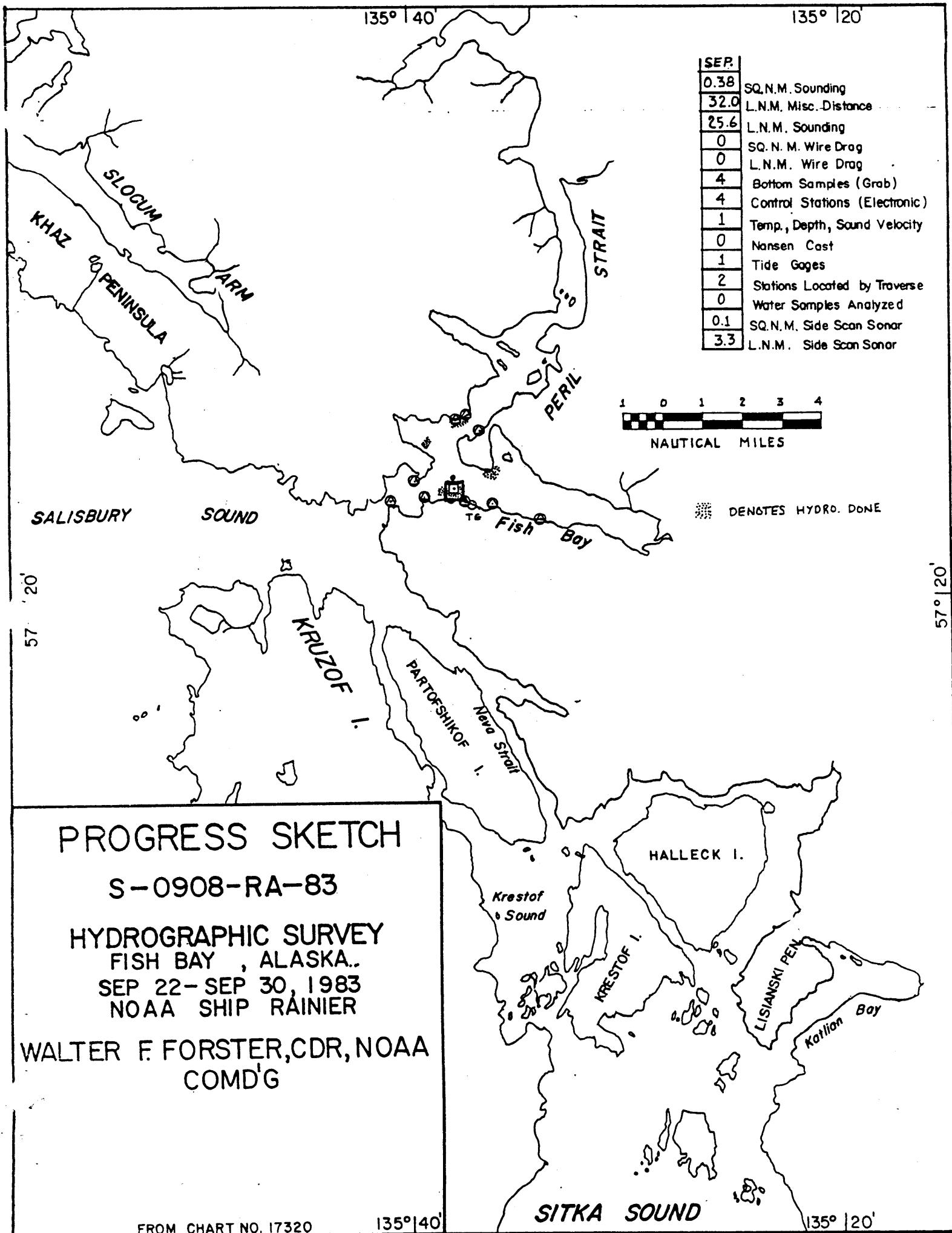
FIELD NO.

RA-5-1-83

State AlaskaGeneral locality Peril StraitLocality Haley RockScale 1:5,000 Date of survey September 25-27, 1983Instructions dated September 16, 1983 Project No. S-0908-RA-83Vessel RAINIER Launch 2123, 2125Chief of party Cdr. W. F. ForsterSurveyed by Lcdr. D. Yeager, Lt. S. Iwamoto, Ens. B. Postle, Ens. K. BartonSoundings taken by echo sounder, hand lead, pole Ross Fathometer SystemGraphic record scaled by Ship's personnelGraphic record checked by Ship's personnel

Verification

~~XXXXXXXX~~ by J. N. ShofnerAutomated plot by PMC Xynetics Plotter~~XXXXXXXX~~ by C. R. DaviesSoundings in fathoms feet at MLW MLLW and tenths of FathomsREMARKS: All times are in UTC. Annotations in black were made during evaluation  
at the Pacific Marine Center, Seattle, WashingtonSTANDARDS CK'D 6-25-84  
C. LogAWOIS - 9/18/84 GMSMSURF - 9/18/84 GMSM



A. PROJECT

This field examination was conducted in accordance with Project Instructions S-0908-RA-83, Yakutat Bay and Fish Bay, Alaska, dated September 16, 1983. ✓

B. AREA SURVEYED

This field examination was conducted in Fish Bay, in the vicinity of Haley Rock. The project area extended from Latitude  $57^{\circ} 22' 32''$  N, to  $57^{\circ} 22' 52''$  N, and from Longitude  $135^{\circ} 37' 38''$  W, to  $135^{\circ} 38' 30''$  W. Inclusive dates of the survey were September 25 to September 27, 1983. ✓

C. SOUNDING VESSEL

All soundings were obtained using hydrographic survey launch RA-3 (2123). No unusual sounding vessel configuration was used or problems encountered. Two bottom samples were obtained by launch RA-5 (2125). ✓

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Sounding Equipment

Launch RA-3 was equipped with a Ross Fineline Fathometer System. This system included the following Ross components: Model 400 transceiver, model 5000 analog trace recorder, model 6000 digitizer, and a 100 khz transducer. The serial numbers of the components are summarized in Table I. ✓

TABLE I

Echo Sounding Component Serial Numbers

Launch (2123)

Transceiver	1041
Analog	1042
Digitizer	1041

RA-3 (2123) was equipped with a Klein side scan sonar system (S/N 254). The side scan sonar investigation is described in section K of this report.

#### D. SOUNDING EQUIPMENT

##### Sound Velocity Correctors

An STD cast was performed within the survey area to determine sound velocity corrections. The cast was conducted on September 24, 1983 at Latitude 59° 22.7'N, and Longitude 135° 38.0'W. ✓

The standard velocity correctors for this survey were determined by graphing the actual depths minus velocity corrections versus velocity correction and scaling off depths that corresponded to standard correction intervals (see sec. 4.9.5.2.6, Hydrographic Manual, Fourth Edition, 1976). Copies of both the graph and the velocity table (Velocity Table No. 5) are provided in the separates following the text. All smooth field sheets for this survey were plotted using these velocity correctors. Refer to Section I of the Evaluation Report concerning changes incorporated during office processing. ✓

##### Launch Draft Correctors

Corrections for launch draft were determined from standard bar checks. Bar checks were performed twice daily. ✓

The smooth field sheet was plotted using a TRA value of 0.3 fathoms. ✓

##### Launch Settlement and Squat Correctors

Settlement and squat tests were conducted at Shilshole Bay Marina in Puget Sound, Washington on February 14 and 15, 1983. A list of the final correctors is provided in the separates following the text. The smooth field sheets were plotted without these correctors. The Final Settlement and Squat Correctors have been pulled from the Descriptive Report and filed with the field records. ✓

##### Sounding Instrument Correctors

During survey operations the blanking depth was set to a value shoaler than the shoalest bottom expected and was adjusted as the depth changed. The initial trace on the analog recorders was set to zero. Whenever the initial was found to be off, it was corrected during scanning. ✓

Phase calibrations and belt tension checks were performed in accordance with Section AH1.2 of the Hydrographic Manual, (Fourth Edition, 1976) and PMC OORDER, Appendix B. ✓

##### Manual Soundings

Manual soundings were obtained by the use of hand-held lead lines where required. Depth markings on these lines were compared with a steel measuring tape prior to survey operations and were found to be accurate. ✓

#### E. HYDROGRAPHIC SHEETS

Field sheet RA-5-1-83 was prepared on board the RAINIER using the PDP 8/E Hydroplot system. The sheet was based on a modified transverse mercator projection. A list of parameters used to define the hydrographic sheet is attached. All field records will be sent to the Pacific Marine Center, Seattle, Washington for verification. The smooth field sheets for this survey are plotted at a 1:5,000 scale. An overlay of the smooth field sheet provides a side scan position plot. The smooth sheets are attached and made a part of the separates following the text.

#### F. CONTROL STATIONS

Existing geodetic control stations were used. All stations were Third Order, Class 1 on the North American Datum of 1927. For more information, refer to the Horizontal Control Report, S-0908-RA-83.

#### G. HYDROGRAPHIC POSITION CONTROL

Range/Azimuth was the method used for hydrographic position control. Positioning instruments included the Motorola Mini-Ranger III system and a T-1 theodolite. The tables below summarize the location of all Mini-Ranger mobile and shore equipment.

TABLE I

##### Mini-Ranger Mobile Equipment

<u>Vessel</u>	<u>Console</u>	<u>R/T S/N</u>
2123	720	2710

TABLE II

##### Mini-Ranger Shore Equipment

<u>Code</u>	<u>Transponder S/N</u>	<u>Station #</u>
2	B1106	100

#### Mini-Ranger Calibrations and Systems Checks

Initial Mini-Ranger baseline calibration for this equipment was conducted in Seattle, Washington on September 13, 1983. Only initial correctors were used to plot the smooth field sheet. The initial baseline calibration for the R/T console pair and transponder combination also determined minimum signal strength cutoff values for each system. For more information concerning initial calibrations, refer to Electronic Control Report S-0908-RA-83.

### Mini-Ranger Calibrations and Systems Checks (Continued)

Two sextant angles and a check angle were used to compute fixes which confirmed baseline correctors. Such calibrations were taken on a daily basis. ✓

### Mini-Ranger Performance

All shore stations were positioned on Third-Order Class I or better geodetic stations. Power was supplied by two 12-volt batteries connected in series. Overall, the Mini-Ranger system performance was satisfactory. ✓

#### H. SHORELINE

There is no shoreline within the limits of this survey. ✓

#### I. CROSSLINES

A total of 0.5 miles of crosslines were run, representing 4.8% of the mainscheme mileage. Crossline agreement is excellent; 100% of the comparisons were within one fathom. ✓

#### J. JUNCTION

This survey did not junction with any contemporary surveys. ✓

#### K. COMPARISON WITH PRIOR SURVEYS

PSR item number 50585 (AWOIS), a pinnacle rock of less than 3 fathoms reported in the vicinity of  $57^{\circ} 22' 42.5''N$ , and  $135^{\circ} 37' 47.5''W$ , was investigated by echo sounder and side scan sonar during the course of this survey.

See section 1 + 6  
of Eval. Report.

In the echo sounder survey the line spacing was 50 meters in depths greater than 30 fathoms, and 25 meters in depths of less than 30 fathoms. ✓  
No bottom irregularities were found that required further development.

Side scan sonar lines were run in the PSR area to fulfill the 200% bottom coverage requirement. The towfish was deployed from the stern of the launch in water depths ranging from 13 to 48 fathoms. All side scan sonar lines were run using the 100 meter range scale with a line spacing of 40 meters. The side scan line which runs through the center of the PSR area was run twice, in opposing directions, to provide added coverage. A  $40^{\circ}$  beam width and  $20^{\circ}$  down angle was used to obtain the best sonar return. The Ross Fathometer was operated during the investigation. ✓

K. COMPARISON WITH PRIOR SURVEYS (CONTINUED)

The launch towing speed was four knots (1000 rpm). A side scan position plot for this investigation is included with the hydrographic sheets. ✓

A review of the sonargrams shows a rugged bottom that corresponds with the bottom profile indicated by the echo sounding lines run during this survey. The side scan did not reveal any underwater features not found during mainscheme echo sounding operations. There are no side scan sonar contacts which indicate the presence of AWOIS Item 50585. ✓

Survey RA-5-1-83 was compared with prior survey H-7861 (1950-51) 1:10,000 enlarged to 1:5,000. With the exception noted below, comparison between the two surveys is excellent; all coincident soundings are within 1 fathom. No displacement of depth contours has occurred. ✓

One shoal sounding not observed in the prior survey was discovered during the present survey. A 2.4<sup>36</sup> fathom peak was observed at 57° 22.6' N, 135° 38.0' W. This shoal sounding is located between sounding lines of the prior survey and lies in a kelp bed 125 meters south, and inshore of the "rock awash" symbol charted at 57° 22' 40", 135° 38' 02". See Section 4 + 7 of Final Report

As a result of the echo sounder and side scan investigation of the Haley Rock area, it is concluded that the reported pinnacle rock does not exist. ✓ Concur

L. COMPARISON WITH THE CHART

This survey was compared with Chart 17323, 8TH Edition, September 11, 1982, 1:40,000. Agreement with the charted depths was excellent with soundings agreeing within 1 fathom. As discussed in section K, it is concluded that the reported pinnacle rock does not exist. It is recommended that the area remain as charted. ✓ Concur

M. ADEQUACY OF SURVEY

This hydrographic survey is considered complete and adequate to supersede all prior surveys of this limited area. See section 7 of Final Report

N. AIDS TO NAVIGATION

There are no floating aids to navigation within the limits of the survey. Third-Order Class I positions were obtained for Kakul Narrows Light 4 and Suloia Point Light 5. NOAA Forms 76-40's are included in the separates following the text. The two Forms (76-40's) for the two lights were removed from the Descriptive Report. Rickville has copies of both. ✓



O. STATISTICS

<u>Survey Launch</u>	<u>Linear Nautical Miles of Hydro</u>	<u>Square Nautical Miles of Hydro</u>	<u>Linear Nautical Miles of Side Scan</u>
RA-3 (2123)	10.1	0.7	2.7

Number of Positions: 205  
Bottom Samples: 2  
Tide Stations: 1  
Velocity Casts: 1

P. MISCELLANEOUS

No anomolous currents were reported or observed.

Q. RECOMMENDATIONS

No further work is recommended. This survey is considered complete and adequate to supersede prior surveys and to disprove the existence of the reported pinnacle rock located at 57° 22' 42.5"N, 135° 37' 47.5"W.

See Section 7  
of Final Report

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished per instructions in the Hydrographic Manual (4TH Edition), Manual Automated Hydrographic Surveys, the PMC OORDER, Hydrographic Survey Guidelines and the Hydrographic Data Requirements for the 1983 field season.

Soundings and positions were taken by a Hydroplot system using Range/Range Hyperbolic Hydroplot Program RK 112, Range/Azimuth Hydrolog Program FA 181. There are daily master tapes and corresponding corrector tapes which include the TRA, electronic baseline calibration correctors for Mini-Ranger consoles and transponders and all depth corrections. A velocity tape was generated from sound velocity, temperature, depth (STD) cast. The following is a list of all computer programs and version dates used for data acquisition or processing:

HYDROPLOT SYSTEM PROGRAM INVENTORY AS OF CHANGE NO.30

<u>Number</u>	<u>Description</u>	<u>Version</u>
RK 112	Hyperbolic, R/R Hydroplot	8/04/81
FA 181	Range/Azimuth Hydrolog	2/23/78
RK 201	Grid, Signal, and Lattice Plot	4/18/75

<u>Number</u>	<u>Description</u>	<u>Version</u>
RK 211	Range/Range Non-Real Time Plot	2/02/81
RK 212	Visual Station Table Load	4/01/74
RK 216	Range/Azimuth Non-Real Time Plot	2/09/81
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	5/04/76
PM 360	Electronic Corrector Abstract	2/02/76
RK 407	Geodetic Inverse/Direct Computation	9/25/78
AM 500	Predicted Tide Generator	11/10/72
RK 561	H/R Geodetic Calibration	12/01/82
AM 602	Elinore-Line Oriented Editor	12/08/82
RK 606	Tape Duplicator	8/22/74
AM 607	Self-Starting Binary Loader	8/10/80
RK 610	Binary Tape Duplicator	12/01/82
RK 612	Line Printer List	3/22/78
RK 900	Plot Test Tape Generator For AM902	5/07/76
PM 901	Core Check	3/01/72
AM 902	Real Time Checkout	11/10/72
DA 903	Diagnostic-Instruction Timer	2/27/76
RK 905	Hydroplot Controller Checkout	3/18/81
RK 935	Hydroplot Hardware Tests	3/15/82
RK 950	Hardware Tests (Documentation Only)	6/02/75
RALOGD	RA-6 Hydrologger	3/11/83

The HP-9815 and HP-97 calculators were used to compute geographic positions of electronic control and visual stations and velocity of sound corrections for the plotting of smooth field sheets.

#### S. REFERRAL TO REPORTS

The following reports contain information related to this survey:

Electronic Control Report	S-0908-RA-83	✓
Horizontal Control Report	S-0908-RA-83	✓
Coast Pilot Report	S-0908-RA-83	

Respectfully Submitted,

*Brian S. Postle*

Brian S. Postle  
ENS, NOAA

PARAMETER TAP LISTING

PA-5-1-83

FISH EAY

PA-5-1-83  
HALEY ROCK

SKEW: 0.9.11  
FEST=5000  
CLAT=6360000  
CMFF=135/38/0  
GPID=15  
FLSCL=5000  
PLAT=57/22/27  
FLON=135/38/39  
VESNO=21.24  
YF=83  
ANLIST=0.0

### FIELD TIDE NOTES ✓

Field tide reduction of soundings for the Fish Bay portion of S-0908-RA-83 was based on predicted tides from Sitka, Alaska (945-1600). Corrections were obtained from preliminary tidal zoning S-0908-RA-83. The predicted tides were derived using program AM500. One subordinate tide station provided data for survey S-0908-RA-83.

A bubbler gage was installed at the historical gage site near Haley Anchorage, Fish Bay, Alaska (945-1826),  $57^{\circ} 22.3'N$ ,  $135^{\circ} 37.1'W$ . The gage was installed on September 24, 1983 and removed on September 28, 1983.

The high humidity at the gage site affected the transfer of paper through the chart drive. This resulted in the paper jumping sprocket holes, thus causing time errors. Placing a new roll of paper in the gage did not improve the situation. In spite of this problem, the trace on the marigrams is continuous and the data is acceptable.

Three permanent benchmarks were recovered as described and leveled during the installation of the Haley Anchorage gage. Three additional benchmarks in the area were recovered but not connected with levels. A fourth benchmark was searched for but not recovered.

The initial and final levels for this gage were run on September 24 and September 28, 1983. Comparison of these levels indicated that the staff stop elevation changed by 8mm during the course of this survey.

The staff value of the zero line on the tide records was 7.73 feet, and the time meridian for records annotation was  $0^{\circ}$  (UTC).

GEOGRAPHIC NAMES

FE-250

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="transform: rotate(-45deg); white-space: nowrap;">A ON CHART NO. 17323</div> <div style="transform: rotate(-45deg); white-space: nowrap;">B ON PREVIOUS SURVEY NO.</div> <div style="transform: rotate(-45deg); white-space: nowrap;">C ON U.S. QUADRANGLE MAPS</div> <div style="transform: rotate(-45deg); white-space: nowrap;">D FROM LOCAL INFORMATION</div> <div style="transform: rotate(-45deg); white-space: nowrap;">E ON LOCAL MAPS</div> <div style="transform: rotate(-45deg); white-space: nowrap;">F P.O. GUIDE OR MAP</div> <div style="transform: rotate(-45deg); white-space: nowrap;">G RAND McNALLY ATLAS</div> <div style="transform: rotate(-45deg); white-space: nowrap;">H U.S. LIGHT LIST</div> <div style="transform: rotate(-45deg); white-space: nowrap;">K</div> </div>									
	A	B	C	D	E	F	G	H	K	
ALASKA (title)	X									1
PERIL STRAIT (title)	X									2
HALEY ROCK	X									3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

VELOCITY TAPE LISTING

RA-5-1-83  
S-0908-RA-83  
FISH BAY, ALASKA ✓

TABLE NO. 5

000055	0	0000	0005	001	000000	000000
000119	0	0001				
000183	0	0002				
000252	0	0003				
000316	0	0004				
000385	0	0005				
000449	0	0006				
000515	0	0007				
000582	0	0008				
000646	0	0009				
999999	0	0010				

TC/TI TAPE LISTIN  
FA-5-1-83

LAUNCH - 2123(FA-3)

FATHO. S/N - 1042

181200 0003 0005 268 212300 000000

~~18182400 0002 0005 268 212300 000000~~

180056 0 0000 0000 269 000000 000000

180908 0 0003 0005 269 000000 000000

180754 0 0000 0000 270 000000 000000

183336 0 0003 0005 270 000000 000000

~~192000 0 0003~~

235759

LAUNCH - 2125(FA-5)

BOTTOM SAMPLES ONLY

191000 0 0000 0000 270 212500 000000

192500 0 0000

✓ ship should submit  
the same TC/TI tape  
used for the survey  
J.2268 (SIDE-SCAN DATA and DATA that  
was Return)

# ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2123

SHEET : RA-5-1-83

✓ the ship should  
submit the same  
corrector tape used  
for the survey  
J.0268 (SIDE-SCAN - DATA +  
DATA THAT WAS RERUN)

TIME	DAY	PATTERN 1	PATTERN 2	REMARKS
181232	268	-00002	+10000	
223648	268	-00002	+18322	
161824	269	-00002	+10000	R/AZ
180056		-00002	+11473	
182131		-00002	+07000	
213900		+00000	+00000	
171643	270	-00002	+25000	R/AZ
180754		-00002	+09009	
183336		-00002	+17181	
193000		+00000	+00000	

NOTE: FOR RANGE AZIMUTH DISREGUARD PATTERN 2



ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2125

SHEET : RA-5-1-83 ✓

TIME	DAY	PATTERN 1	PATTERN 2
191000	270	+00000	-70440
192500		+00000	+00000

FOR LARGE AZIMUTH HYDRO DISREGARD PATTERN 2 CORRECTION

MASTER STATION LIST  
S-0908-RA-83, FISH BAY, ALASKA ✓

FINAL VERSION

100 3 57 22 20193 135 36 13445 250 0001 000000  
/HALEY 1950 571353 STA.1131

~~200 3 57 22 52571 135 39 40704 139 0001 000000~~  
~~/CLOUD 1950 571353 STA.1049~~

201 3 57 22 25135 135 37 31236 139 0002 000000  
/CLIP 2 1950 571353 STA.1045

~~202 3 57 22 27102 135 40 54500 139 0007 000000~~  
~~/KAKUL NARROWS LIGHT 1950 571353 STA.1153~~

~~203 3 57 22 30827 135 39 18605 139 0002 000000~~  
~~/RANGE 2 1950 571353 STA.1228~~

~~204 3 57 24 20853 135 37 45153 139 0005 000000~~  
~~/SERGIUS NARROWS LIGHT 1950 571353 STA.1250~~

~~205 3 57 23 23122 135 10 53339 139 0006 000000~~  
~~/SULOIA POINT LIGHT L.L. 3379~~

ABSTRACTS OF POSITIONS  
S-0908-RA-83  
RA-S-1-83

VESSEL: (2123) (RA-3)      ANDIST: 0.0

<u>DAY</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
268	3000-3043	11	100-R/AZ	Hydro. Not to be smooth plotted.
268	3053-3062	11	100-R/AZ	Side scan. Not to be smooth plotted.
269	3064-3119	11	100-R/AZ	Mainscheme hydro.
269	3121-3122	11	100-R/AZ	D.P. leadline rock.
269	3123-3218	11	100-R/AZ	Mainscheme hydro.
269	3219-3225	11	100-R/AZ	Crosslines hydro.
270	3237-3243	11	100-R/AZ	Side scan.
270	3244-3254	11	100-R/AZ	D.P. kelp lines.
270	3255	11	100-R/AZ	D.P. rock.
270	3256-3276	11	100-R/AZ	Side scan. Crossline.
270	3277-3279	11	100-R/AZ	Side scan. Mainscheme.

Rejected Positions: 3020; 3023; 3035; 3044-3052; 3063; 3090; 3120; 3144;  
3154; 3163; 3168; 3208; 3210-3212; 3226-3236; 3266

ABSTRACTS OF POSITIONS  
RA-S-1-83

VESSEL: (2125) (RA-3) ANDIST: 0.0

<u>DAY</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
270	5056-5057	11	100-R/AZ	Bottom samples.

Use more than one line per sample if necessary.

APPROVAL SHEET  
DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY  
RA-5-1-82

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OPORDER, Hydrographic Survey Guidelines, and the 1983 Data Requirements Letter. The data was examined daily during the execution of the survey.

The boatsheet and the accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.

A handwritten signature in dark ink, appearing to read "David W. Yeager". The signature is fluid and cursive, with the first name "David" and last name "Yeager" clearly distinguishable.

David W. Yeager  
Lieutenant Commander, NOAA  
Acting Commanding Officer

## HYDROGRAPHIC SURVEY STATISTICS

FE-250

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION			AMOUNT	RECORD DESCRIPTION			AMOUNT
SMOOTH SHEET			1	SMOOTH OVERLAYS: POS. <sup>3</sup> , ARC, <sup>1</sup> EXCESS <sup>3</sup>			76
DESCRIPTIVE REPORT			1	FIELD SHEETS AND OTHER OVERLAYS			2
DESCRIP- TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR- GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS		
ACCORDIAN FILES							
ENVELOPES							
VOLUMES							
CAHIERS							
BOXES				1			

## SHORELINE DATA

SHORELINE MAPS(List):

PHOTOBATHYMETRIC MAPS(List):

NOTES TO THE HYDROGRAPHER(List):

SPECIAL REPORTS(List):

NAUTICAL CHARTS(List):

## OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			247
POSITIONS REVISED	443		443
SOUNDINGS REVISED	39		39
CONTROL STATIONS REVISED			
	TIME - HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION	2		2
VERIFICATION OF CONTROL	2	2	4
VERIFICATION OF POSITIONS	15	4	19
VERIFICATION OF SOUNDINGS	15	6	21
VERIFICATION OF JUNCTIONS		1	1
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	15	1	16
COMPARISON WITH PRIOR SURVEYS AND CHARTS		7	7
EVALUATION OF SIDESCAN SONAR RECORDS		1	1
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT	2	11	13
OTHER			
Digitization	6		6
TOTALS	57	33	90
Pre-processing Examination by LT M. Kenny	Beginning Date 11/29/83	Ending Date 11/30/83	
Verification of Field Data by J. N. Shofner	Beginning Date 2/7/84	Ending Date 4/30/84	
Verification Check by: Evaluation Check by; J. L. Stringham, J. S. Green	Time(Hours) 14	Ending Date 5/18/84	
Evaluation and Analysis by C. R. Davies	Beginning Date 5/11/84	Ending Date 5/18/84	
Inspection by D. Hill	Time(Hours) 1	Ending Date 5-25-84	

PACIFIC MARINE CENTER  
EVALUATION REPORT

REGISTRY NO: FE-250

FIELD NO: RA-5-1-83

Alaska, Peril Strait, Haley Rock

SURVEYED: September 25-27, 1983

SCALE: 1,5,000

PROJECT NO: S-0908-RA-83

SOUNDINGS: Ross Model 5000 Fathometer

CONTROL: Range/Azimuth  
Motorola Mini-Ranger  
III/Wild T-2

Chief of Party.....Cdr. W. F. Forster

Surveyed by.....Lt.Cdr. D. W. Yeager  
Lt. S. Iwamoto  
Ens. B. Postle  
Ens. K. Barton

Automated Plot by.....PMC Xynetics Plotter

Verified by.....J. N. Shofner

Evaluated by.....C. R. Davies

1. INTRODUCTION

FE-250 is a field examination conducted in accordance with the following:

Project Instructions S-0908-RA-83, dated September 16, 1983

FE-250 (1983) is a field examination of the area around Haley Rock in Fish Bay, Alaska. The purpose of the field examination was to investigate the reported existence of a submerged pinnacle rock, covering less than 3 fathoms in the vicinity of latitude 57°22'42.5"N and longitude 135°37'47.5"W.

One temporary bubbler tide gage, Haley Anchorage, Fish Bay, Alaska (945-1826) was installed and operated concurrently with field operations. The Haley Anchorage tide gage was utilized to zone the survey for reduction of sounding data on the smooth sheet. Soundings on the final field sheet were reduced on the basis of predicted tides from Sitka, Alaska (845-1600). Further information is available in the Field Tide Note.

During verification the following data was changed:

a. Projection parameters were changed to center the hydrography on the smooth sheet and to change the projection to polyconic.

b. Tide level values are from observed tides, see form 712.



c. Velocity correctors were changed to reflect a corrected velocity, see letter dated February 28, 1984.

Numerous abstracts and supplements not relevant to the user of the processed data have been removed from the Descriptive Report and filed with the field records.

## 2 CONTROL AND SHORELINE

Positions of the horizontal control stations used during survey operations are published geodetic positions based on the North American Datum of 1927. The smooth sheet was plotted using published NGS coordinates. Hydrographic positioning was conducted primarily using a Motorola Mini-Ranger III (range/azimuth) system.

All remaining information affecting the positioning and station control of this survey is listed in paragraphs F and G of the Descriptive Report, the Horizontal Control Report and the Electronic Control Report for S-0908-RA-83.

There is no shoreline within the limits of FE-250.

## 3. HYDROGRAPHY

Crossline soundings are in good agreement. The depth curves could be adequately drawn. Hydrography within the limits of FE-250 was adequate to determine the bottom configuration and least depths with the exception of a 2.5 fathom sounding at latitude 57°22'36"N, longitude 135°38'00"W.

## 4. CONDITION OF SURVEY

The hydrographic records and report are adequate and conform to the requirements of the Hydrographic Manual with the exception of:

Additional development of the 2.5 fm shoal located at latitude 57°22'36"N and longitude 135°38'00"W should have been accomplished. A minimum observed depth was found from an interpolated position on the fathogram while underway. A leadline sounding was taken but was found to be deeper than the position on line. There were no additional data or statements by the hydrographer supporting that a sufficient search has been made. Complete development and determination of least depths should include closer line spacing, cross or radial lines, drift soundings, or dive investigations (Reference sections 1.4.3 and 4.5.9.3 of the Hydrographic Manual and Project Instructions S-0908-RA-83, dated September 16, 1983).

## 5. JUNCTIONS

FE-250 is not bordered by any contemporary surveys. Depths on this survey are in harmony with charted depths in the junction area.

## 6. COMPARISON WITH PRIOR SURVEY

H-7861 (1950-51) 1:10,000

Generally, differences in depths are small ( $\pm 1$  fathom), and the standard depth curves compare well. Any differences are attributed to data acquisition techniques.

The present survey is adequate to supersede the prior survey information within the common area.

## 7. COMPARISON WITH CHART

17323, 8th Edition, September 11, 1982

a. Hydrography - With the exception of the following reported rock, all charted information originates with the prior survey previously discussed in section 6. All charted features have been satisfactorily investigated and discussed.

One presurvey review item, 50585 (AWOIS), is on the survey, a submerged pinnacle rock, covered less than 3 fathoms reported by Capt. William W. Mitchell on May 27, 1983, at latitude  $57^{\circ}22'42.5''N$  and  $135^{\circ}37'47.5''W$  (see attached letter). It was investigated with echo sounder and side scan <sup>SONAR</sup> methods. No indication of a 3 fathom rock exists at the above position.

One danger to navigation was found during preprocessing of FE-250. The appropriate letter was sent to the Coast Guard, Juneau, Alaska, December 7, 1983 (a copy is attached).

The geographic name appearing on the smooth chart, Haley Rock, originates from the chart.

FE-250 is adequate to supersede charted hydrography within the common area.

b. Controlling Depths - There are no controlling depths within the limits of the present survey.

c. Aids to Navigation - There are no aids to navigation within the limits of the present survey.

## 8. COMPLIANCE WITH INSTRUCTIONS

FE-250 adequately complies with the project instructions listed in section 1 of this report except as noted in section 4, Condition of Survey.

9. ADDITIONAL FIELD WORK

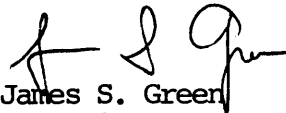
FE-250 is a good field examination. Additional field work concerning the development of a least depth (section 3, Hydrography) should be addressed in future project planning for Fish Bay on a low priority basis.

Respectfully,



Charles R. Davies  
Cartographic Technician  
May 18, 1984

This survey has been verified and evaluated. I have examined this survey and it meets Charting and Geodetic Services survey standards and requirements for use in nautical charting except as noted in the Evaluation Report. This survey is recommended for approval.



James S. Green  
Supervisory Cartographer

National Ocean Service  
Pacific Marine Center  
1801 Fairview Avenue East  
Seattle, Washington 98102-3767

FEB 1984

N/MOP:MRK

TO: Commanding Officer  
NOAA Ship RAINIER

FROM: N/MOP - Charles K. Townsend

SUBJECT: Sound Velocity Corrections

FEB 28 1984

It has been determined that the velocity tables were calculated incorrectly for all projects in which the new Sound Velocity/Depth Measuring System (SV/D) was used. Projects included are OPR-P114-RA-83, OPR-0168-RA-83, and S-0908-RA-83. Project S-0907-RA-83 used tables from OPR-0168-RA-83.

A "Data Reduction Program" was written by the ship for the HP-97 that incorrectly calculates a velocity correction factor based on the depth (determined from pressure readings) and sound velocity at that depth. Since sound velocity in most cases varies with depth, the water column must be considered in layers with a velocity correction factor determined for each layer. The corrections computed are then summed to arrive at total velocity corrections applicable to given depths. The velocity correction factors must be redone using the "summation of layers" method for all projects.

Another factor not considered in the HP-97 program is the vessel's draft. Velocity tables are tabulated so that the entering argument is the observed depth plus the draft. Using the SV/D, the first layer includes the water column from the surface to the transducer. This fact necessitates a corresponding shift in layer thickness when calculating the first layer correction unless the draft effect is negligible.

For projects OPR-0168-RA-83 and S-0908-RA-83 the incorrect pressure coefficients were entered into the "Coefficient Input Program". Sound velocity and depth values should be recomputed for these projects.

The results of these corrective actions should be submitted as addenda to the appropriate Corrections to Echo Sounding Reports (enclosed) and forwarded to the Nautical Chart Branch, N/MOP21 prior to departure in mid-February. The addendum should include a brief explanation, HP-97 program results (if applicable), layer correction worksheets, graphs, and velocity tables. Refer to the Hydrographic Manual, section 4.9.5.2, for instructions on layering and determining corrections.

Questions regarding this matter should be referred to Dennis Hill, N/MOP211, telephone 527-6853.



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Service  
Pacific Marine Center  
1801 Fairview Avenue East  
Seattle, Washington 98102-3767

DEC 07 1983

Commander (OAN)  
Seventeenth Coast Guard District  
P.O. Box 3-5000  
Juneau, Alaska 99802

Dear Sir:

An uncharted shoal was noted during preliminary office review of the field examination of Fish Bay in the vicinity of Haley Rock, Alaska, and is considered a danger to navigation. Questions concerning the survey may be directed to Capt. Ned C. Austin, Chief, Nautical Chart Branch, telephone (206) 527-6835.

The following statement is recommended for inclusion in the Local Notice to Mariners:

"An uncharted shoal covered by 1.5 fathoms (MLW based on predicted tides) is at latitude 57°22.6'N, longitude 135°38.0'W, bearing 148 degrees true, 0.95 nautical miles from Suloia Pt. Light (Chart 17323)."

Sincerely,

Charles K. Townsend  
Rear Admiral, NOAA  
Director, Pacific Marine Center





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
CHARTING AND GEODETIC SERVICES  
Rockville, Md. 20852

AUG 12 1983

N/CG241:MJF

TO: N/CG2 - C. William Hayes *[Signature]*  
FROM: N/CG24 - Glen R. Schaefer *[Signature: Glen R. Schaefer]*  
SUBJECT: Haley Rock, Fish Bay, Alaska  
REF: Capt. William W. Mitchell letter, 5/27/83

An evaluation of the data furnished in the referenced letter has been accomplished. The evaluation has provided the following results.

General: A reexamination of data from a portion of hydrographic survey H-7861 (1950-51), in the vicinity of Haley Rock, clearly shows an irregular bottom configuration in this area.

Positioning Control: Hand-held compass bearings are not considered an accurate means of determining survey positions and do not conform with National Ocean Service standards for hydrographic surveying. Hand-held compass bearings, tangent to the shoreline at Haley Point and Schulze Head, are subject to ambiguous interpretation of the point where the bearing line touches the shoreline. (See the graphic overlay constructed to illustrate the compass bearings.) No information was available with regard to the magnetic deviation of the compass used in the investigation. However, the compass bearings, corrected for magnetic variation, were plotted on the graphic overlay for illustration and comparison purposes. No information was available regarding the weather conditions, such as sea swell, currents, or visibility that may have affected the observations.

Sounding Equipment: No information was available regarding the type or accuracy of the echo sounder used during the investigation. The depth of water over the pinnacle was reported to be "less than 3 fathoms."

Tide: The computed stage of tide at the beginning of the investigation, 10:20 a.m. Pacific daylight time or 9:20 a.m. Pacific standard time on May 14, 1983, was -2.3 feet or 2.3 feet below mean lower low water (sounding and chart datum). This computed stage of tide is based upon National Ocean Service observed tide at Sitka, Alaska, corrected to Haley Anchorage.

Comparison with Survey H-7861 (1950-51) 1:10,000: A graphic overlay was constructed to depict selected sounding lines and depths from survey H-7861 (1950-51) for comparison with the intersecting compass bearing lines. There is a 78-meter by 157-meter area that was not covered with soundings on survey



H-7861 which is in the same general vicinity indicated by Captain Mitchell's intersecting compass bearings. Attached are copies of fathograms reflecting the surrounding depths portrayed on the survey and overlay. Note that on survey H-7861 the leader from the geographic name "Haley Rock" points incorrectly to the rock awash rather than to Haley Rock.

Recommendations: Although the methods of accomplishing the field investigation are less accurate than normal hydrographic survey quality, the possibility still exists that a pinnacle rock could lie in the unsurveyed area between sounding lines shown on the graphic overlay to survey H-7861. In the interest of marine safety it is recommended that the National Ocean Service schedule a vessel to perform a special survey to more fully survey the area just north of Haley Rock to verify or disprove the existence of the reported pinnacle rock. This special survey is presently scheduled for October 1983.

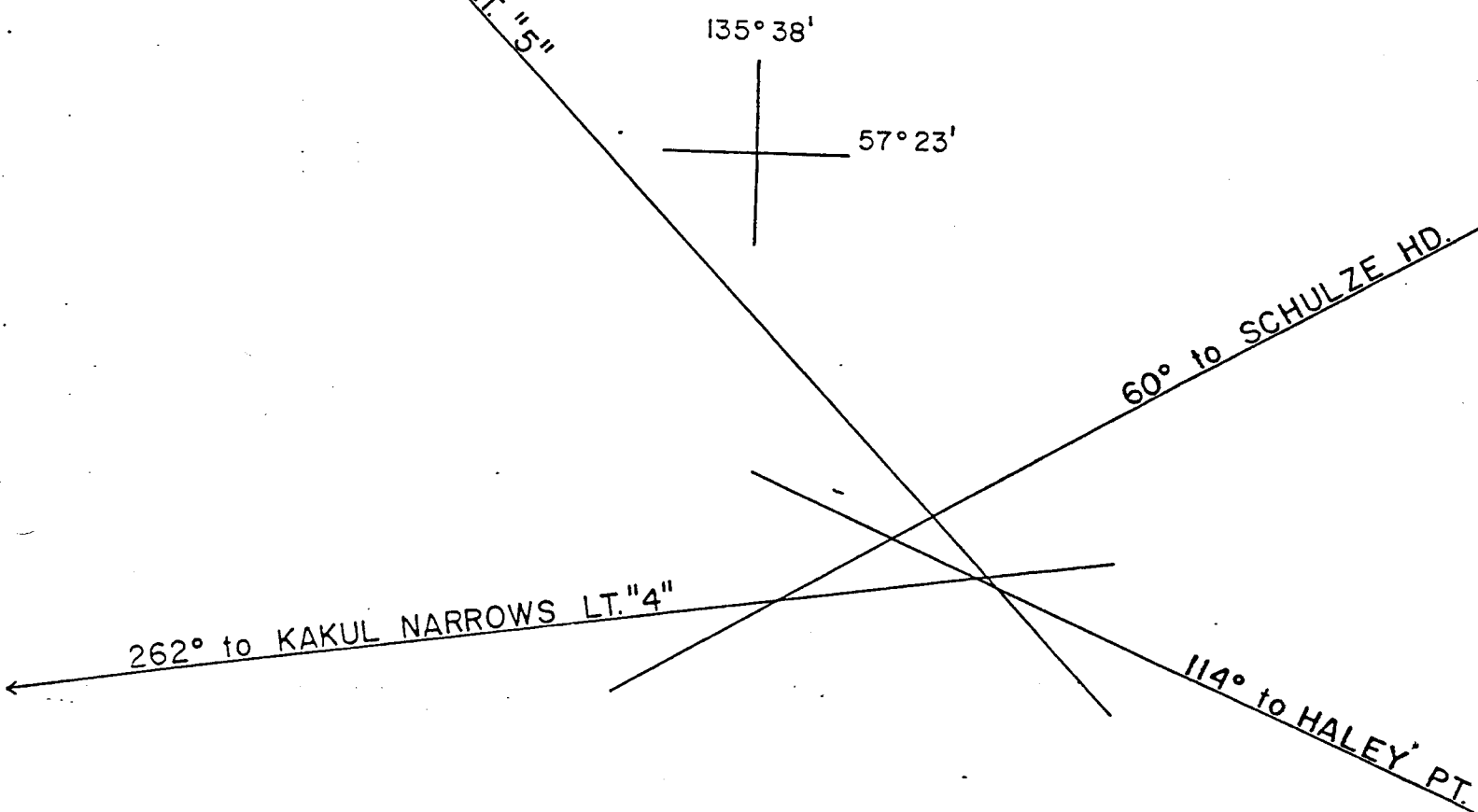
Attachments (7)

cc:  
Cdr. Jacoby, USCG  
N/GC (Conner)  
N/CG22  
N/MOP

SULOIA PT. LT. "5"

\*COMPASS BEARINGS FROM OBSERVED  
PINNACLE TO FOUR SIGHTED  
OBJECTS

(MAY 14, 1983)



\*CORRECTED FOR VARIATION

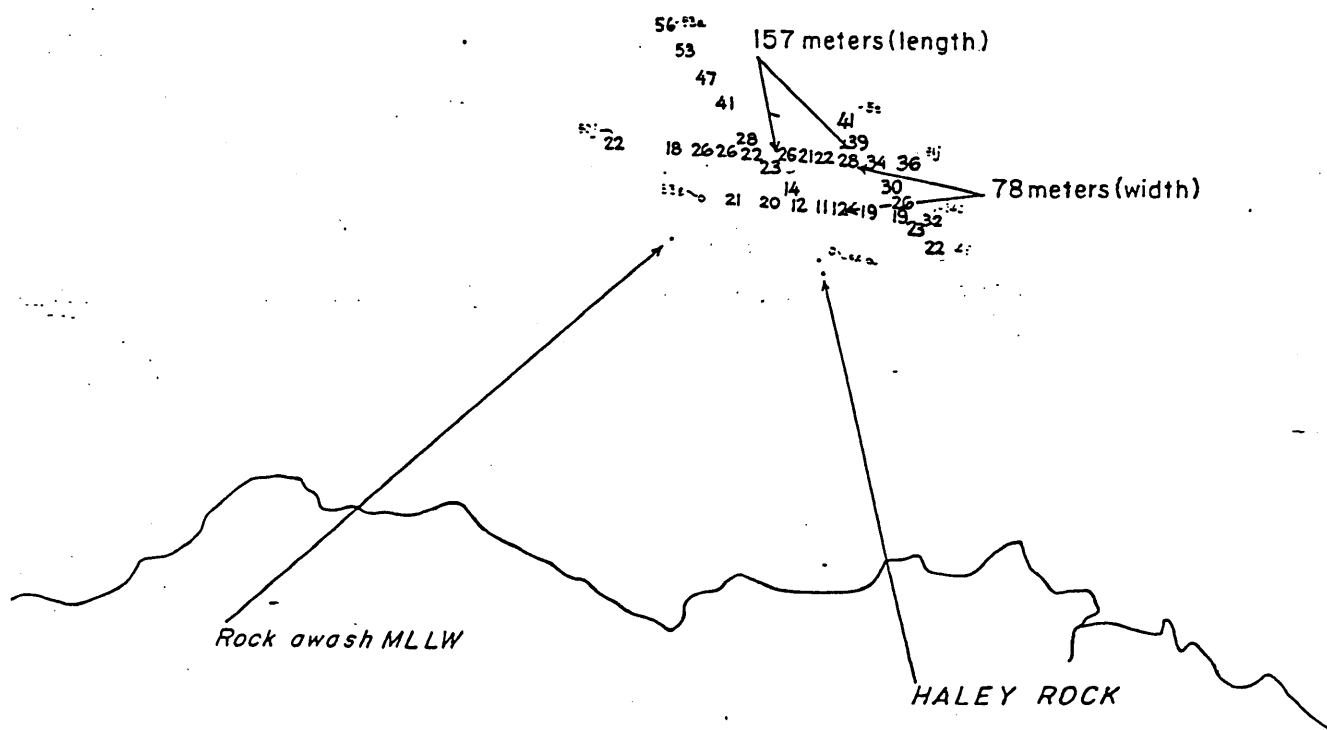
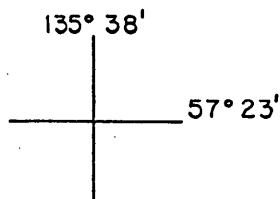
Source: Capt. William W. Mitchell

PLOTTED BY: MJF  
CHECKED BY: SJV

135° 38'

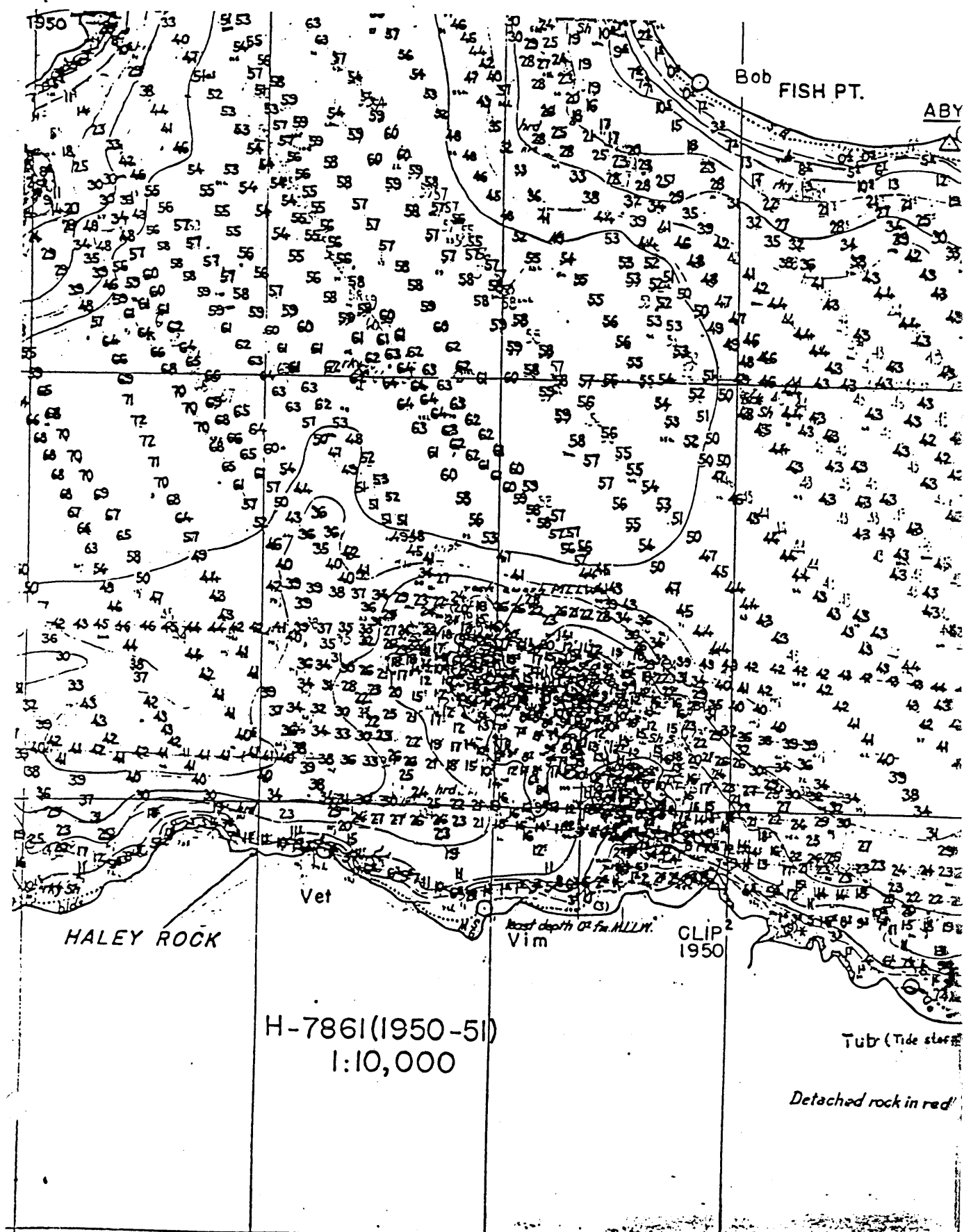


SOUNDINGS IN FATHOMS AT MLLW ARE  
TRANSFERRED FROM H-7861(1950-51)  
AT 1:10,000



Source: National Ocean Service

$135^{\circ} 38'$



REC'D JUN 7 1983  
HYDROGRAPHIC SURVEYS BRANCH  
NAUTICAL CHARTING DIVISION

Wm. W. Mitchell  
1304 Millar Street  
Ketchikan, Alaska 99901

RECEIVED

1983 JUN -3 P 1:1  
NCD

May 27, 1983

Capt. C. Wm Hayes  
Chief, Nautical Charting Div.  
Charting and Geodetic Services  
National Ocean Service  
Rockville, MD 20852

CG24  
CG2  
CG24

Response

Dear Capt. Hayes:

Thank you for your prompt answer to my letter and the enclosed Xerox copy of the portion of survey in the vicinity of Haley Rock, Fish Bay, Alaska. Unfortunately the copy of survey did not help my case and the Judge rendered an adverse decision.

I conducted my own survey of the area on May 14, 1983, arriving at West Haley Rock at ~~1040~~ 1020. Chartered a 21' boat with fathometer to rough check depths and utilized a Silva Type 15 Compass (hand held) with Sighting Mirror.

In The course of our rough survey we located a pinnacle just NE of East Haley Rock which showed less than 3 fathoms. Attached is a copy of my bearings. West Haley rock was bared by approx. 2.0 Feet and my bearings or ranges worked out right on The money. East Haley Rock did not bare so just tried to estimate the center of The large kelp patch.

The pinnacle bearings were taken while the boatman kept The boat over The pinnacle. Attached is my bearings sheet and a copy of a portion of NOAA Chart 17323 with The pinnacle bearings drawn in. No other pinnacles were located but The possibility exists.

The next time a survey vessel is in The area this could be checked. The pinnacle was well clear of The kelp patch.

Very sincerely,

Capt. Wm. W. Mitchell  
1304 Millar Street  
Ketchikan, Alaska 99901

Wm. W. Mitchell

VAT 41 10 4  
1982

Bearings taken May 14, 1983

	Mag	True
rock west of Haley Rk to Suloia Pt. Lt.	300°	327°
Haley Rk to Channel Rk Lt.	236°	263°
Haley Rk to Schulze Hd.	034°	061°

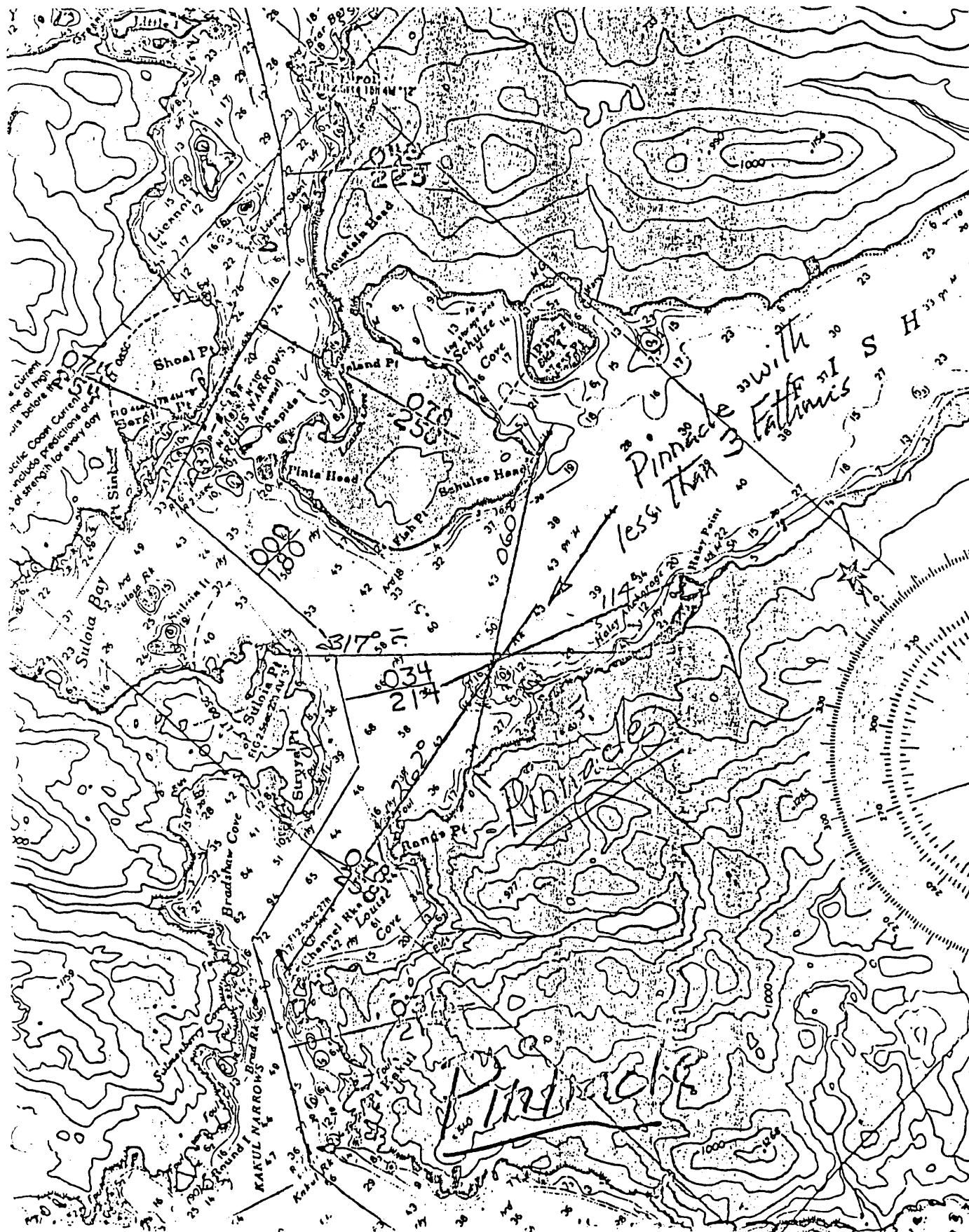
Haley Rk Easterly Rk to Schulze Hd.	030°	057°
Easterly Rk to Suloia Pt. Lt.	294°	321°
Easterly Rk to Channel Rk Lt.	237°	264°
Easterly Rk to Haley Pt.	084°	111°

Pinnacle to Suloia Pt. Lt.	290°	317°
Pinnacle to Channel Rk Lt.	235°	262°
Pinnacle to Schulze Hd.	033°	060°
Pinnacle to Haley Pt.	087°	114°

5/14/83

Haley Anchorage 0959 L.W. -2.2'

~~ATL~~



MoP 22

LAW OFFICES

MORIARTY, MIKKELBORG, BROZ, WELLS & FRYER

3300 SEATTLE-FIRST NATIONAL BANK BUILDING  
SEATTLE, WASHINGTON 98154  
(206) 623-5890

CHARLES P. MORIARTY, JR.  
J. A. MIKKELBORG  
D. F. BROZ  
O. WELLS, JR.  
J. M. FRYER, INC., P.S.  
J. M. OLSON  
ROBERT J. WALERIUS  
CHARLES E. YATES  
DOUGLAS M. DUNCAN

PAMELA A. OKANO  
ALEXANDER W. WIRT  
RICHARD L. PHILLIPS  
JEFFREY L. JERNEGAN  
SHANE C. CAREW  
CHRISTOPHER MARSH  
MARGARET DOYLE FITZPATRICK  
WATSON B. BLAIR

May 18, 1983

Director, National Oceanographic Service  
National Oceanic and Atmospheric Administration  
Rockville, MD 20852

MAY 19 1983  
CPM 1 X 1

Re: East Haley Rock, Fish Bay, NOAA Chart No. 17323

Dear Sir:

Investigation of the grounding of the Alaska State Ferry COLUMBIA on May 3, 1983, at 1138 hours in Fish Bay, Alaska, in the general vicinity of Haley Rock has disclosed some discrepancies between the on-site observation and the recorded data published on the chart and in the Coast Pilot.

The discrepancies are:

1. A pinnacle rock rising abruptly to less than 3 fathoms, located at a distance approximately 75 yards off the edge of the kelp surrounding East Haley Rock and in water which the chart shows, by the nearest charted soundings, to be 16 fathoms, 50 fathoms, and 43 fathoms. The pinnacle lies in a northerly direction toward Fish Point on the letter "a" in Haley Rock, as printed on chart No. 17323.

2. U. S. Coast Pilot 8th, 12th, and 14th Editions of 1932, 1969, and 1980 record Haley Rock with 4 feet of water over it, 1/2 fathom over it, and 1/2 fathom over it surrounded by kelp, respectively. Yet on May 14 on a minus 2.2 tide, Haley Rock bared by between 2 and 3 feet.

The observer on May 14, 1983, was Capt. William W. Mitchell, Jr., accompanied by Robert S. McGraw, of Ketchikan and Sitka, respectively. Capt. Mitchell holds photographs taken on that occasion showing the projecting rock and the surrounding heavy kelp beds.

Director, National Oceanographic Service  
May 18, 1983  
Page Two

This investigation was precipitated by the grounding with heavy damage to the Alaska State Ferry COLUMBIA on May 3, 1983, at 1138, the vessel having sustained considerable damage at a distance of approximately 15 feet below the surface while in a position recorded by line of position and three radar ranges as being well clear of the Haley Rock complex. Coast Guard investigation reports evidence of impact on the north edge of West Haley Rock at approximately the 10-foot depth and additional contact slightly to the north at about the 8-foot depth. Our investigation suggests that these contacts are not consistent with the damage to the COLUMBIA, which draws in excess of 16 feet forward, and had no damage at the 10-foot and 8-foot draft area of her hull.

We request that NOAA make the appropriate hydrographic investigation in the interest of safety to ascertain whether a pinnacle exists north of Haley Rock as reported by Capt. Mitchell on his fathometer survey of May 14, by such methods as NOAA customarily employs, including but not limited to a wire drag of the area, to identify the pinnacle and to rule out seismic changes and, if possible, to establish what and where the COLUMBIA struck on May 3 at 1138.

Very truly yours,

Jacob A. Mikkelsen

JAM/cb

cc William W. Mitchell, Jr.

Richard Meyer, NOAA Pacific Marine Center



A certified copy of the registered hydrographic survey number H-7861 has been forwarded to you as requested. The survey was performed in 1950 and is plotted at a scale of 1:10,000.

The position of the reported underwater obstruction hit by the M/V COLUMBIA, 57°22'50" N and 135°37'48" W, lies between two sounding lines in 56 fathoms of water. The distance between the sounding lines at that position is approximately 120 meters. Considering the depth of the water at that point and the relatively wide beam width of the echo sounder used for this survey, the possibility of an undetected obstruction existing at that position is extremely unlikely.

It is my understanding that this letter and the certified copy of H-7861 are adequate for your needs, and that a resurvey of the area is no longer considered necessary. If we can be of any further assistance, please do not hesitate to contact my staff or the Pacific Marine Center in Seattle.

Address Memo or Letter to:

CDR H. D. Jacoby  
Commanding Officer  
Marine Safety Office  
Juneau, AK 99801

Address Package with Survey and Memo or Letter to:

CWO Ron Trunblee  
Marine Safety Detachment  
United States Coast Guard Base  
Ketchikan, Alaska 99901  
907-225-4496

From: LCDR Alan D. Anderson  
Pacific Marine Center  
1801 Fairview Avenue East  
Seattle, WA 98102  
206-442-7659

\*\*\*\*INFORMATION WAS READ TO CDR JACOBY OVER THE TELEPHONE\*\*\*\*

OA DE SSC  
OA/008

P 061625Z MAY 83  
FM COGARD MSO JUNEAU AK  
TO OA/DIR PMC NOAAS SEATTLE WA  
INFO ZEN/COGARD MSD KETCHIKAN AK  
ZEN/CCGDSEVENTEEN JUNEAU AK  
BT

UNCLAS //NO3136//

SUBJ: M/V COLUMBIA

A. NOS CHART 17323

B. TELCON CDR JACOBY (MSO JUNEAU)/CDR AUSTIN (NOS) OF 83MAY05 NOTAL

1. SUBJ VSL GROUNDED WITH EXTENSIVE BOTTOM DAMAGE 03MAY83 IN REPORTED POSITION 57-22-50N 135-37-48W. REF A APPLIES.

2. PURSUANT TO REF B, REQUEST NOS VESSEL SURVEY OF FOLLOWING AREA WITHIN 30 DAYS: ONE HALF MILE RADIUS OF HALEY ROCK. SURVEY SHOULD VERIFY THAT HALEY ROCK AND BLUE WATER IS CORRECT AS PRESENTLY CHARTED AND ALSO THAT NO OTHER BLUE WATER AREAS OR OBSTRUCTIONS ARE WITHIN THE AREA DISCRIBED ABOVE.

3. ONCE SURVEY COMPLETED, REQUEST DATA BE FORWARDED THIS OFFICE ASAP.

BT

TOD-05:06:17:27

*110224 - Cdr Austin  
Please See me on this.*

ACTION.....REPLY BY: (LTR/MSG) DATE.....ADD'L FOLLOW UP.....

CC: MOP/X2/1/2/.../.../.../... IN DATE...05/06/83...MSG RELEASE...

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: S - 0908

HYDROGRAPHIC SHEET: FE - 250

Locality: Haley Rock, Fish Bay, Alaska

Time Period: September 25-27, 1983

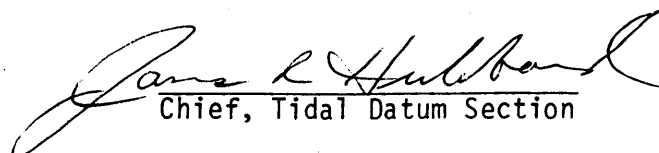
Tide Station Used: 945-1826, Haley Anchorage, Alaska

Plane Of Reference (Mean Lower Low Water): 18.57 Ft.

Height Of Mean High Water Above Plane Of Reference: 9.4 Ft.

Remarks: Recommended Zoning:

For the survey area located within the following boundaries, latitude  $57^{\circ}22.5'$ , latitude,  $57^{\circ}23.1'$  and longitude  $135^{\circ}37.2'$ , longitude  $135^{\circ}38.5'$ , zone direct.

  
Chief, Tidal Datum Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR FE-250

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

David W. Yeager 5/30/84  
Chief, Nautical Chart Branch (Date)

CLEARANCE:

SIGNATURE AND DATE:

N/MOP2:LWMordock

---

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Charles T. Townsend 5/30/84  
Director, Pacific Marine Center (Date)

Electronic Control Report  
S-0908-RA-83

Fish Bay and Yakutat Bay, Alaska

NOAA Ship RAINIER

Commander Walter Forster  
Captain Ned Austin  
Commanding Officers

## INTRODUCTION

A field examination and a chart evaluation survey were conducted in Fish Bay and Yakutat Bay, Alaska, respectively, in accordance with Project Instructions S-0908-RA-83, dated August 22, 1983. The Fish Bay and Yakutat surveys were conducted on September 25-27, 1983 and October 6-8, 1983 respectively.

Mini-Ranger electronic position control was utilized during hydrographic surveys RA-5-1-83, Fish Bay and RA-80-1-83, Yakutat Bay.

Instrumentation used in positioning control included the Motorola Mini-Ranger III system and Wild T-1 theodolites. Survey RA-5-1-83 used Range/Azimuth positioning methods. Survey RA-80-1-83 used Range/Range<sup>2</sup> positioning methods.

## Mini-Ranger Equipment

The table below summarizes the serial numbers of all mobile and shore equipment:

TABLE I

<u>Vessel</u>	<u>Console S/N</u>	<u>R/T S/N</u>	<u>Dates JD</u>
2120	715	B1108	279-281
2123	720	2710	268-270
2125	715	B1108	269-270

TABLE II

## Mini-Ranger Shore Equipment

<u>Transponder Code</u>	<u>Serial Number</u>
C	1628
E	911721
F	911711
1	C1883
2	B1106

## Mini-Ranger Performance

Performance of Mini-Rangers was satisfactory, in the survey areas. An infrequent problem at Yakutat Bay was intermittent loss of ranges. It was difficult to determine the cause of this problem, but was presumed to be null zones.

### Mini-Ranger Performance (Continued)

These unstable conditions occurred at random times and locations. These loss of ranges were never severe enough to preclude calibrating or operating. Signal strengths were generally very good. High gain antennas were placed on a few transponders to enhance signal strengths. All transponders, except one, were set up on Third Order, Class I (or better) geodetic stations. In Yakutat Bay a Mini-Ranger transponder (code 1) was used on Ocean Cape Light (station 200) which has a Fourth-Order position determined by the DAVIDSON in 1978. Power was supplied by two 12 volt batteries connected in series.

### Baseline Calibrations

An initial baseline calibration was performed in connection with Project S-0908-RA-83. Initial calibrations were conducted on Lake Union, Seattle, Washington. An ending baseline calibration will be conducted in November. Hence, only initial baseline correctors were used to plot the smooth field sheets. The initial baseline calibrations for each R/T console pair and transponder combination also determines minimum signal strength cutoff values for each system. Initial calibration data and separates are included in the separates to this report. Table III summarizes the correctors determined from initial baseline calibrations.

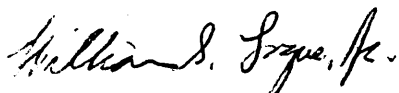
TABLE III

<u>Date</u>	<u>Console R/T</u>	<u>Codes</u>					
		C	E	F	1	2	
9/13/83	715/B1108	1	-1	1	-1	0	
	720/2710	Not	Not	0	0	-2	
		Used	Used				

### Daily System Checks

Critical system checks were completed by observing horizontal sextant angles to visible Third-Order, Class I or better geodetic stations. Non-critical checks were accomplished using three Mini-Ranger rates. These checks were used to confirm the baseline correctors in accordance with PMC OORDER Appendices M and S.

Respectfully Submitted,



William G. Logue, Jr.  
ENS, NOAA

Approved and Forwarded,



David W. Yeager, LCDR, NOAA  
Acting Commanding Officer

FE-250

SCALE 1:5000

57° 23' 00"

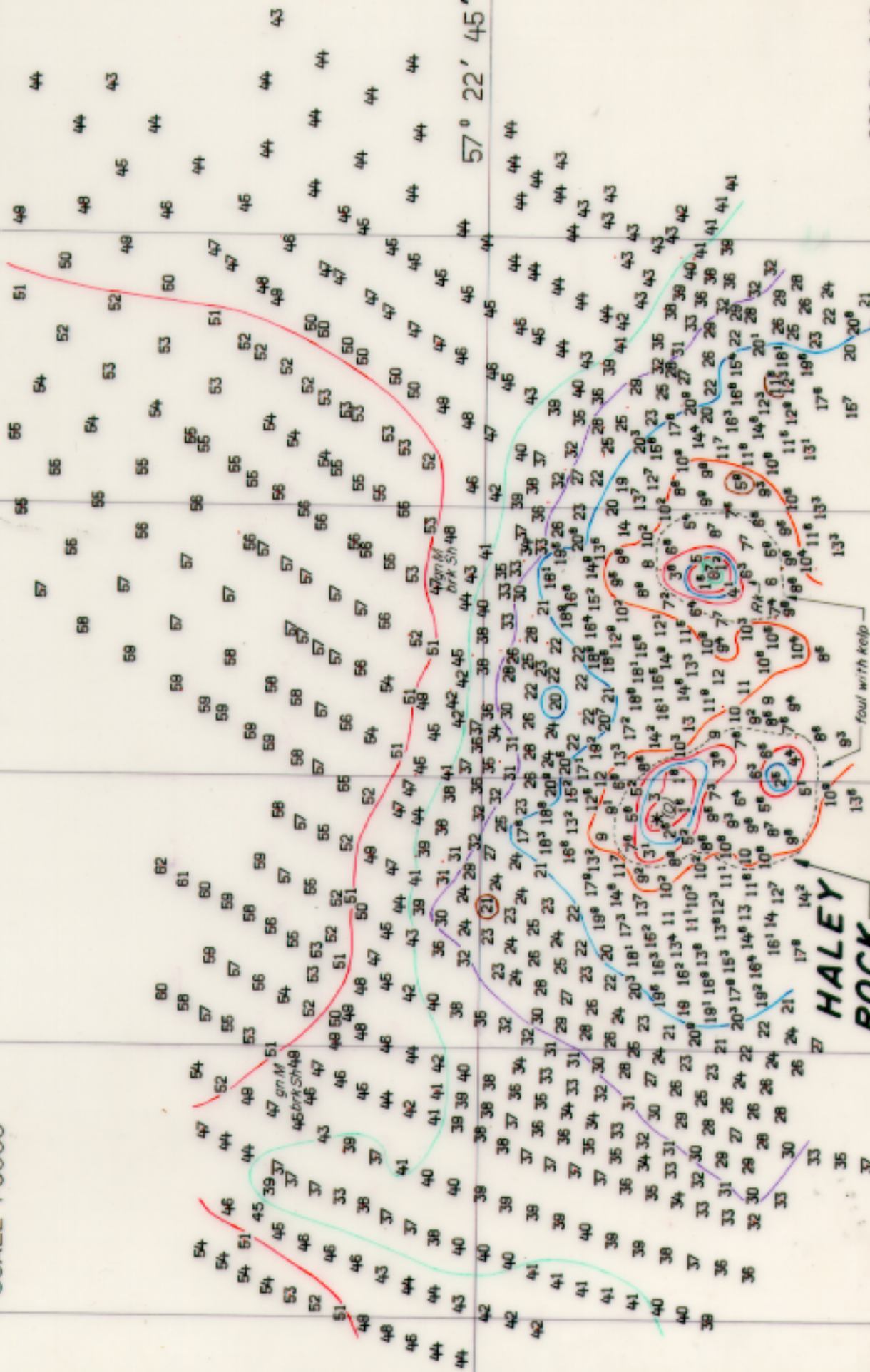
57° 22' 45"

SSS PL 4-19-84

135° 38' 30" 135° 38' 15" 135° 38' 00" 135° 37' 45" 135° 37' 30"

**HALEY  
ROCK**

foul with kelp





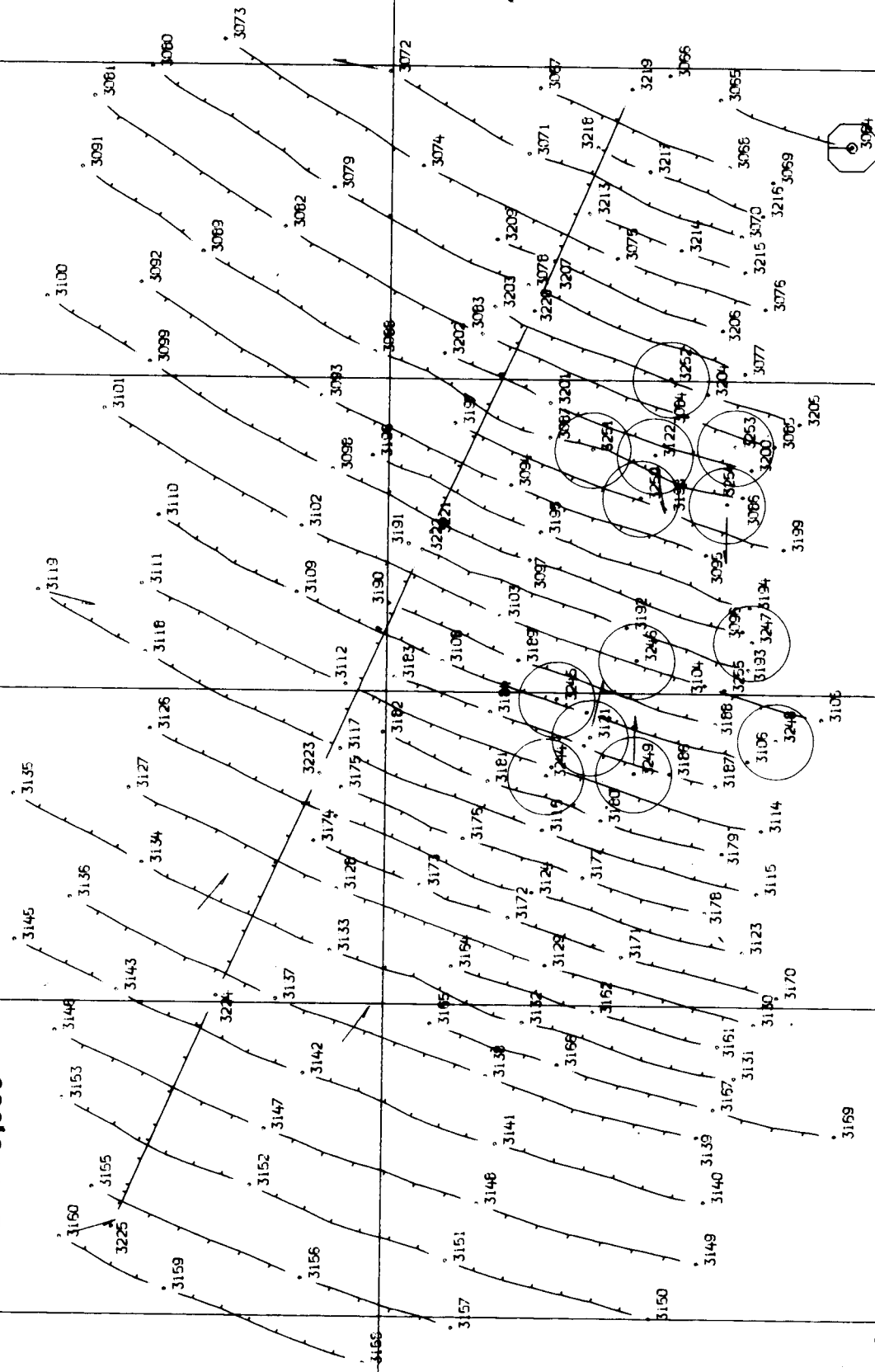
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE CHARTING AND GEODETIC SERVICES		ADM H. R. LIPPOLD, JR., DIRECTOR	
HYDROGRAPHIC FIELD EXAMINATION FE-250 ALASKA, PERIL STRAIT HALEY ROCK			
FIELD SHEET: RA-5-1-83		PROJECT: SSP-0908	
DATUM: HOR. SNDG.		NORTH AMERICAN DATUM OF 1927 MEAN LOWER LOW WATER	
PROJECTION		POLYCONIC	
SCALE		1:5000	
SURVEYED BY		NOAA SHIP RAINIER CDR W. F. FORSTER	
PROCESSED BY		NAUTICAL CHART BRANCH, PACIFIC MARINE CENTER	
APPROVED BY		ADM C. K. TOWNSEND <i>Charles K. Townsend</i> DIRECTOR, PACIFIC MARINE CENTER MAY 30, 1984	

57° 23' 00"

57° 22' 45"

135° 38' 30" 135° 38' 15" 135° 38' 00" 135° 37' 45" 135° 37' 30"

H-250 4-19-84  
POSITION OVERLAY A  
SHEET 1 OF 3  
SCALE 1:5,000

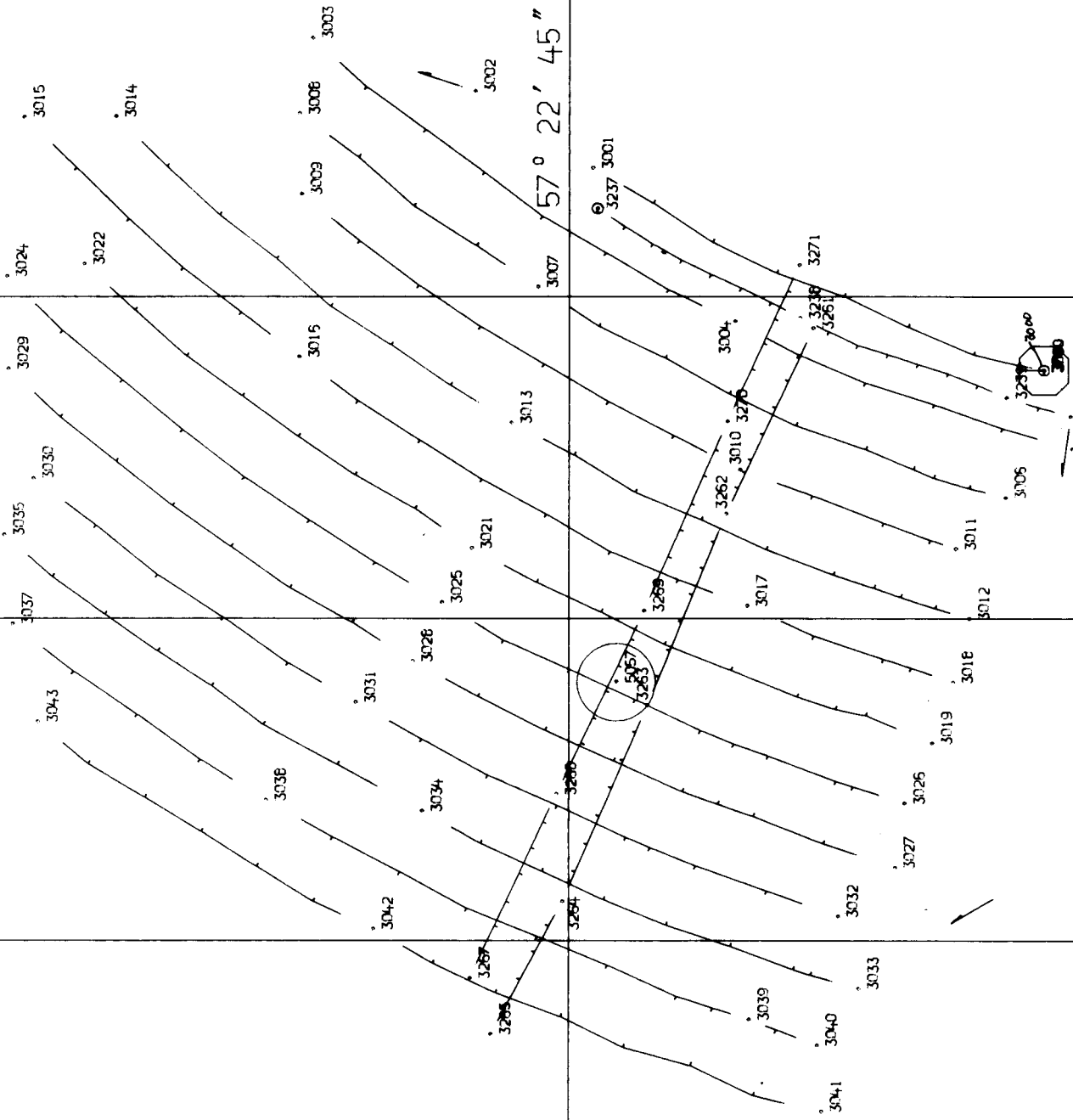


57° 23' 00"

57° 22' 45"

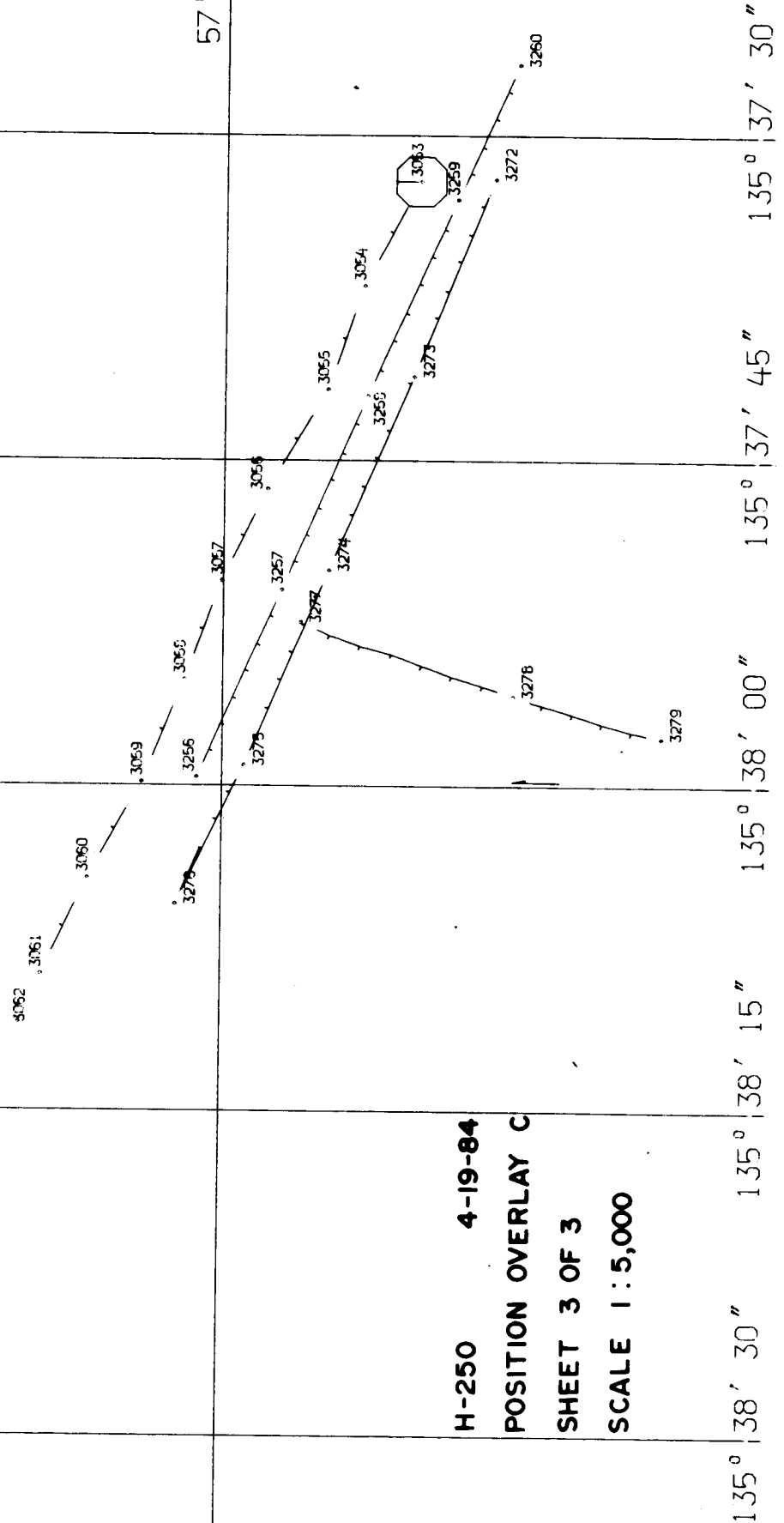
135° 38' 30" 135° 38' 15" 135° 38' 00" 135° 37' 45" 135° 37' 30"

H-250 4-19-84  
POSITION OVERLAY B  
SHEET 2 OF 3  
SCALE 1:5,000

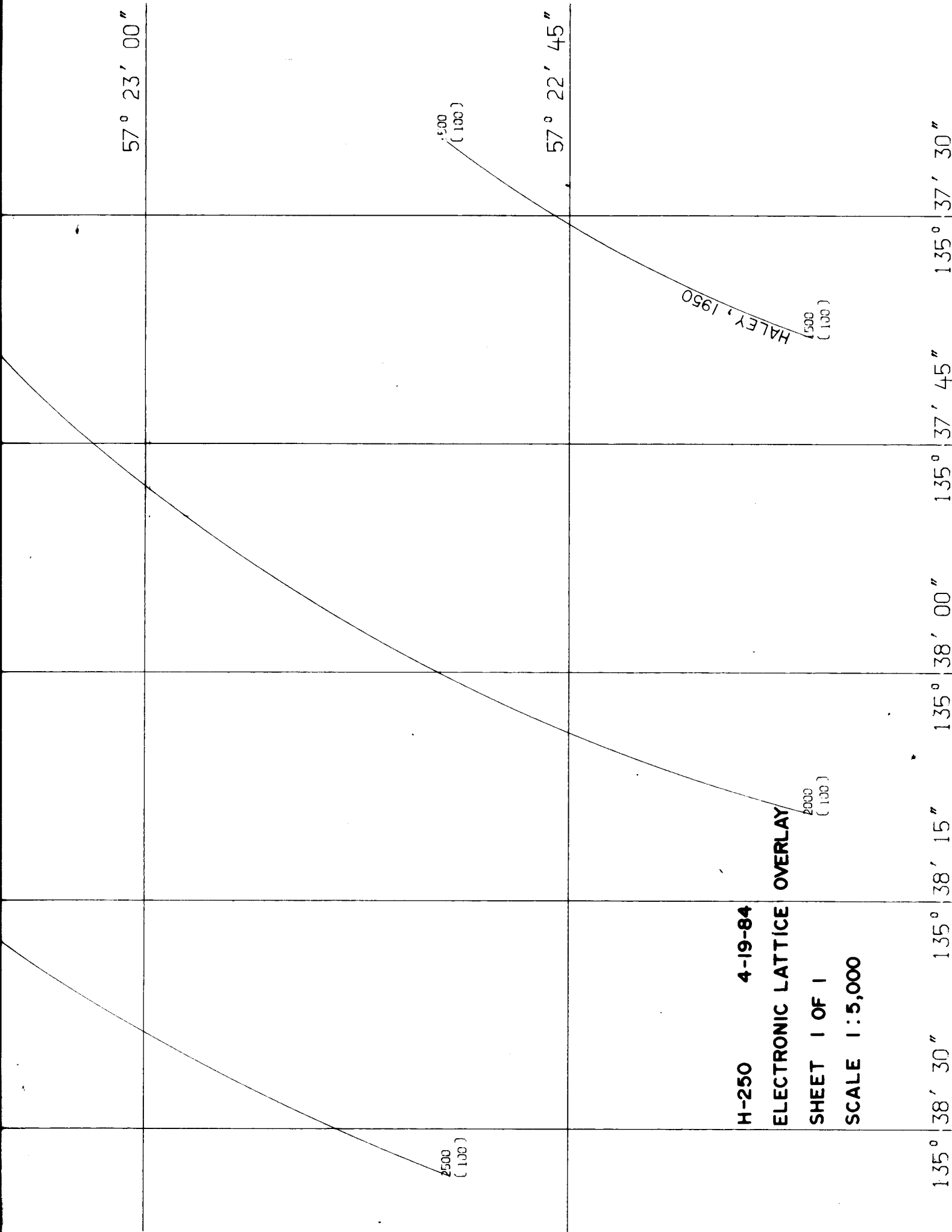


57° 23' 00"

57° 22' 45"



H-250 4-19-84  
POSITION OVERLAY C  
SHEET 3 OF 3  
SCALE 1:5,000



57° 23' 00"

57° 22' 45"

135° 37' 30"

135° 37' 45"

135° 38' 00"

135° 38' 15"

135° 38' 30"

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H-250 4-19-84

EXCESS SOUNDING

SHEET 1 OF 3

SCALE 1:5,000

OVERLAY

57° 23' 00"

57° 22' 45"

135° 37' 30"

135° 37' 45"

135° 38' 00"

135° 38' 15"

135° 38' 30"

H-250 4-19-84  
EXCESS SOUNDING  
SHEET 2 OF 3  
SCALE 1:5,000

OVERLAY

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57° 23' 00"

57° 22' 45"

135° 38' 30" 135° 38' 15" 135° 38' 00" 135° 37' 45" 135° 37' 30"

H-250 4-19-84  
EXCESS SOUNDING  
SHEET 3 OF 3  
SCALE 1:5,000

OVERLAY

41 37 32 30 28 21 23 24 25 24 24 31 35 36 39 40 41 42 3



DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Survey  
Washington, D.C.

Hydrographic Index No. 111E

